

Appl. No. 10/687,299  
Amdt. Dated May 23, 2006  
Reply to Office Action of Feb. 23, 2006

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listing, of claims in the application.

**Listing of Claims:**

Claim 1 (currently amended): A patch antenna employed in a portable electrical device comprising:

- a planar ground plane;
- a radiating element parallelly disposed above the ground plane with a predetermined distance;
- a plurality of dielectric supporting portions disposed between the ground plane and the radiating element for supporting the radiating element;
- a metal match tab electrically connected with the radiating element; and
- a feeder cable comprising an inner conductor electrically and directly mechanically connecting with the match tab and an outer shield conductor electrically and mechanically connecting with the ground plane.

Claim 2 (original): The patch antenna as claimed in claim 1, wherein the ground plane comprises a main ground plane, a sub-ground plane disposed above the main ground plain and a shorted strap for connecting the sub-ground plane to the main ground plane.

Claim 3 (original): The patch antenna as claimed in claim 2, wherein the cable outer shield conductor is electrically connected with the sub-ground plane.

Appl. No. 10/687,299  
Amdt. Dated May 23, 2006  
Reply to Office Action of Feb. 23, 2006

Claim 4 (original): The patch antenna as claimed in claim 3, wherein the sub-ground plane is coplanar with the match tab.

Claim 5 (original): The patch antenna as claimed in claim 4, wherein the match tab and the radiating element are formed by one metal sheet.

Claim 6 (original): The patch antenna as claimed in claim 4, wherein said radiating element and match tab are coplanar with each other.

Claim 7 (currently amended): A patch antenna for a portable electronic device, comprising:

- a planar metal sheet comprising a first element, a second element and a connecting patch connecting the first element with the second element;

- a first ground plane disposed adjacent to the first element;

- a second ground plane parallelly spaced from the metal sheet a predetermined distance;

- a shorted patch connecting the first ground plane to the second ground plane;

- a plurality of dielectric supporting portions disposed between the metal sheet and the second ground plane to support the metal sheet; and

- a feeder cable comprising an inner conductor electrically and directly mechanically connecting with the first element and an outer shield conductor electrically and mechanically connecting with the first ground plane.

Claim 8 (original): The patch antenna as claimed in claim 7, wherein the first ground plane is coplanar with the metal sheet.

Appl. No. 10/687,299  
Amdt. Dated May 23, 2006  
Reply to Office Action of Feb. 23, 2006

Claim 9 (original): The patch antenna as claimed in claim 8, wherein the feed cable lies on the first ground plane.

Claim 10 (original): The patch antenna as claimed in claim 9, wherein the first and second elements are both rectangular.

Claim 11 (original): The patch antenna as claimed in claim 7, wherein the first element and the second element are coplanar with each other.

Claim 12 (currently amended): A patch antenna for a portable electrical device comprising:

a first metal element, a second metal element and a metal connecting patch connecting the first element with the second element;

a ground portion disposed adjacent to the first element; and

a feeder cable comprising an inner conductor electrically and directly mechanically connecting with the first element and an outer shield conductor electrically connecting with the ground portion;

wherein the connection patch has a characteristic impedance same as that of the input impedance of the second element.

Claim 13 (original): The antenna as claimed in claim 12, wherein a plurality of dielectric supporting portions are disposed between the metal sheet and the ground portion to support the metal sheet..

Claim 14 (original): The patch antenna as claimed in claim 13, wherein the

Appl. No. 10/687,299  
Amdt. Dated May 23, 2006  
Reply to Office Action of Feb. 23, 2006

first element, the second element and the connecting patch are formed in one metal sheet.

Claim 15 (original): The patch antenna as claimed in claim 14, wherein the ground portion comprises an upper ground plane, a lower ground plane and a short patch connecting the upper ground plane to the lower ground plane.

Claim 16 (original): The patch antenna as claimed in claim 15, wherein the outer shield conductor electrically connects with the upper ground plane.

Claim 17 (original): The patch antenna as claimed in claim 16, wherein the metal sheet is parallel to the lower ground plane.

Claim 18 (original): The patch antenna as claimed in claim 12, wherein said first element and said second element are coplanar with each other.

Claim 19 (canceled)

Claim 20 (previously presented): The patch antenna as claimed in claim 1, wherein the match tab indirectly mechanically connected with the radiating element via a connecting patch which is not grounded to the ground plane.